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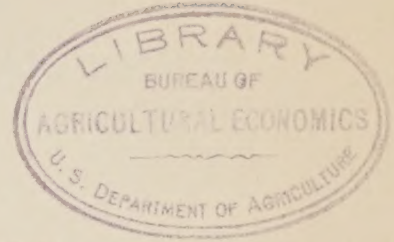




UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Agricultural Engineering  
S. H. McCrory, Chief

APR 17 1934

in cooperation with the  
UNIVERSITY OF MISSOURI  
College of Agriculture  
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## PLAN OF REHABILITATION FOR LITTLE RIVER

DRAINAGE DISTRICT, SOUTHEASTERN MISSOURI  
by

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United States Department of Agriculture  
Bureau of Agricultural Engineering

PLAN OF REHABILITATION FOR LITTLE RIVER DRAINAGE DISTRICT,  
SOUTHEASTERN MISSOURI.

INTRODUCTION

The Little River Drainage District, situated in southeastern Missouri, includes about 463,000 acres of bottom land protected from overflow from the hill streams to the north by a diversion levee and channel and drained by an elaborate system of ditches. In the fall of 1932 the supervisors of the district, through their attorney, advised the Bureau of Agricultural Engineering that the district was in bad financial condition and requested that an investigation be made with a view to outlining a plan of rehabilitation. In compliance therewith, investigation of the physical and financial condition of the district was made in January and February, 1933, by Lewis A. Jones, Chief, Division of Drainage and Erosion Control; Wells A. Hutchins, Irrigation Economist; and G. R. Shier, Junior Agricultural Engineer. The staff of the Missouri State College of Agriculture cooperated by furnishing agricultural data relating to the area and by assisting in the analysis of the data collected.

The Little River Drainage District includes land in the southern parts of Cape Girardeau and Bollinger counties, the eastern parts of Stoddard and Dunklin counties, and the western parts of Scott, New Madrid, and Pemiscot counties. There are 463,350 acres of assessed land within the boundary of the district, embracing a territory approximately ninety miles long with an average width of ten miles. Prior to the construction of the drainage improvements these lands were subject to overflow during



times of high water in Castor and Little River and a number of minor creeks. The diversion of those streams to the Mississippi River, at the extreme north part of the district, together with a system of ditches throughout the area, has made possible the cultivation of a large part of the land in the district.

#### DEVELOPMENT OF DRAINAGE IMPROVEMENTS

##### Original Plan

The Little River Drainage District was organized in 1907 and the original plan for drainage was adopted in 1909. The works constructed under the original plan are of two general classes, (1) those embraced in the headwater diversion system, the function of which is to protect the lands of the district from the overflow of streams originating in the foothills of the Ozarks by diverting their waters into the Mississippi River, and (2) those embraced in the main drainage system, which has the function of carrying off the waters from the Little River valley south of the headwater diversion levee. The cost of this original work was approximately \$5,107,000.

##### The West Extension

The construction of the headwater diversion system relieved from overflow by Castor River an area of about 38,000 acres lying south of the foothills of the Ozarks in Stoddard and Bollinger counties that had not been included in the original plan. Those lands were benefited, and for this reason they were later included in the Little River Drainage District. The plan for draining the West Extension was adopted in 1916, and construction was started in 1921 and completed in 1923. The plan provides a complete outlet system of drainage for the lands, together with a levee along



the north and west boundaries to prevent overflow by run-off originating in the hills to the north and west. The total cost was approximately \$544,519.

#### Equalizing Plan

With the enlargement of tributary ditch systems outside the district, thus bringing in greater volumes of water than were anticipated under the original plan, and the necessity for making the great body of lands within the district actively productive, the needs of a large part of the district were inadequately served by the original plan. To remedy this condition and to maintain, extend, and improve the works constructed under the original plan, the equalizing plan was adopted in 1924. Work was started under this plan in 1924, and approximately 150 miles of new ditches were constructed, 30 miles of old ditches and channels were enlarged, 100 miles of minor dredging was done, 80 miles of new levees were constructed, and 90 miles of old levees were strengthened and enlarged. The cost of this work was approximately \$4,000,000.

#### Additional Construction Anticipated

While the work as outlined provides a fair degree of reclamation, it must not be considered as a final solution of the drainage problem. It has been the general experience of drainage districts that a higher degree of drainage is demanded as additional lands are brought into cultivation and general conditions within the territory bettered. The enlargement of tributary drainage channels by other drainage districts likewise may make additional work necessary in the Little River Drainage District. In anticipation of the complete development of the district, the district has prepared a plan for complete drainage, which will eventually cost some \$4,000,000 in addition to what has already been spent.



#### EXISTING DRAINAGE CONDITIONS

It is believed that the existing drainage improvements, if properly maintained, would afford reasonable drainage for the district in its present state of development, namely, about 55 per cent of the area cleared and in cultivation. Occasional overflows undoubtedly would occur at times of excessive precipitation, but such overflows would be of short duration and serious damage to crops would be relatively infrequent. During recent years little or no maintenance work has been done, and as a result the ditches are badly overgrown with willows. The capacity of the ditches is at present so reduced that serious overflows will result from even moderate rainstorms. It is doubtful whether crops can be successfully grown on much of the cleared land in the district until the ditches are cleared and properly maintained.

#### ADMINISTRATION

The affairs of the district are managed by a Board of Supervisors consisting of five members elected in rotation, one each year, for a term of five years. In electing members of the Board, each assessed acre of land in the district is entitled to one vote. The Board employs the necessary staff to supervise and maintain the district improvements and meets in the district office at Cape Girardeau at least once a month. An examination of the records leads to the conclusion that the affairs of the district have been efficiently conducted.

#### BOND ISSUES

To pay for the drainage improvements thus far constructed, bonds have been issued by the district, secured by benefit assessments, in the following amounts:



Table 1.- Maturity Dates of Bonds and Coupons for Little River Drainage District

FIRST BOND ISSUE \$4,750,000.00 Dated Oct. 1, 1913			SECOND BOND ISSUE \$1,000,000.00 Dated Dec. 1, 1918		THIRD BOND ISSUE \$600,000.00 Dated Oct. 1, 1920		FOURTH BOND ISSUE \$750,000.00 Dated April 1, 1921		FIFTH BOND ISSUE \$4,000,000.00 Dated Oct. 1, 1924		Totals
Date Maturing	Bonds	Coupons	Bonds	Coupons	Bonds	Coupons	Bonds	Coupons	Bonds	Coupons	
Apr. 1-1914		130625.00									130625.00
Oct. 1-1914		130625.00									130625.00
Apr. 1-1915		130625.00									130625.00
Oct. 1-1915		130625.00									130625.00
Apr. 1-1916		130625.00									130625.00
Oct. 1-1916		130625.00									130625.00
Apr. 1-1917		130625.00									130625.00
Oct. 1-1917		130625.00									130625.00
Apr. 1-1918		130625.00									130625.00
Oct. 1-1918		130625.00									130625.00
Apr. 1-1919		130625.00		18328.00							148953.00
Oct. 1-1919	213000.	130625.00		27500.00							371125.00
Apr. 1-1920		124767.50		27500.00							152267.50
Oct. 1-1920	224000.	124767.50		27500.00							376267.50
Apr. 1-1921		118607.50		27500.00		18000.00					164107.50
Oct. 1-1921	236000.	118607.50		27500.00		18000.00		22500.			422607.50
Apr. 1-1922		112117.50		27500.00		18000.00		22500.			180117.50
Oct. 1-1922	249000.	112117.50		27500.00		18000.00		22500.			429117.50
Apr. 1-1923		105270.00		27500.00		18000.00		22500.			173270.00
Oct. 1-1923	263000.	105270.00		27500.00		18000.00		22500.			436270.00
Apr. 1-1924		98037.50		27500.00		18000.00		22500.			166037.50
Oct. 1-1924	277000.	98037.50		27500.00		18000.00		22500.			443037.50
Apr. 1-1925		90420.00		27500.00		18000.00		22500.		110000.	268420.00
Oct. 1-1925	293000.	90420.00		27500.00		18000.00		22500.		110000.	561420.00
Apr. 1-1926		82362.50		27500.00		18000.00	28000.	22500.		110000.	288362.50
Oct. 1-1926	309000.	82362.50		27500.00		18000.00		21660.		110000.	568522.50
Apr. 1-1927		73865.00		27500.00		18000.00	30000.	21660.		110000.	281025.00
Oct. 1-1927	325000.	73865.00		27500.00		18000.00		20760.		110000.	575125.00
Apr. 1-1928		64927.50		27500.00		18000.00	32000.	20760.		110000.	273187.50
Oct. 1-1928	343000.	64927.50		27500.00		18000.00		19800.		110000.	583227.50
Apr. 1-1929		56495.00		27500.00		18000.00	34000.	19800.		110000.	264795.00
Oct. 1-1929	362000.	56495.00		27500.00		18000.00		18780.		110000.	591775.00
Apr. 1-1930		46540.00		27500.00		18000.00	37000.	18780.		110000.	256820.00
Oct. 1-1930	382000.	46540.00		27500.00		18000.00		17670.		110000.	600710.00
Apr. 1-1931		36035.00		27500.00		18000.00	40000.	17670.		110000.	248205.00
Oct. 1-1931	403000.	36035.00		27500.00		18000.00		16470.		110000.	610005.00
Apr. 1-1932		23952.50		27500.00		18000.00	42000.	16470.		110000.	237922.50
Oct. 1-1932	426000.	23952.50		27500.00		18000.00		15210.		110000.	620562.50
Apr. 1-1933		12237.50		27500.00		18000.00	44000.	15210.		110000.	226947.50
Oct. 1-1933	445000.	12237.50		27500.00		18000.00		13890.		110000.	626627.50
Apr. 1-1934				27500.00		18000.00	47000.	13890.		110000.	216390.00
Oct. 1-1934			500000.	27500.00		18000.00		12480.		110000.	667980.00
Apr. 1-1935				13750.00		18000.00	50000.	12480.		110000.	204230.00
Oct. 1-1935			500000.	13750.00		18000000		10980.		110000.	652730.00
Apr. 1-1936					600000.	18000.00	52000.	9420.		110000.	790980.00
Oct. 1-1936								9420.		110000.	119420.00
Apr. 1-1937							56000.		500000.	6875.	175420.00
Oct. 1-1937										6875.	506875.00
Apr. 1-1938							59000.	7740.		96250.	103990.00
Oct. 1-1938								7740.		96250.	162990.00
Apr. 1-1939									500000.	6875.	506875.00
Oct. 1-1939							63000.	5970.		82500.	88470.00
Apr. 1-1940								5970.		82500.	151470.00
Oct. 1-1940									500000.	6875.	506875.00
Apr. 1-1941								4080.		68750.	72830.00
Oct. 1-1941							66000.	4080.		68750.	138830.00
Apr. 1-1942									500000.	6875.	506875.00
Oct. 1-1942								2100.		55000.	57100.00
Apr. 1-1943							70000.	2100.		55000.	127100.00
Oct. 1-1943									500000.	6875.	506875.00
Apr. 1-1944										41250.	41250.00
Oct. 1-1944										41250.	41250.00
Apr. 1-1945									500000.	6875.	506875.00
Oct. 1-1945										27500.	27500.00
Apr. 1-1946									500000.	6875.	506875.00
Oct. 1-1946										13750.	13750.00
Apr. 1-1947									500000.	6875.	506875.00
Oct. 1-1947											506875.00
Apr. 1-1948											506875.00
Oct. 1-1948											506875.00
Apr. 1-1949											506875.00
Oct. 1-1949											506875.00
Apr. 1-1950											506875.00
Oct. 1-1950											506875.00
Apr. 1-1951											506875.00
Oct. 1-1951											506875.00
Apr. 1-1952											506875.00
Oct. 1-1952											506875.00
Apr. 1-1953											506875.00
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Apr. 1-1960											506875.00
Oct. 1-1960											506875.00
Apr. 1-1961											506875.00
Oct. 1-1961											506875.00
Apr. 1-1962											506875.00
Oct. 1-1962											506875.00
Apr. 1-1963											506875.00
Oct. 1-1963											506875.00
Apr. 1-1964											506875.00
Oct. 1-1964											506875.00
Apr. 1-1965											506875.00
Oct. 1-1965											506875.00
Apr. 1-1966											506875.00
Oct. 1-1966											506875.00
Apr. 1-1967											506875.00
Oct. 1-1967											506875.00
Apr. 1-1968											506875.00
Oct. 1-1968											506875.00
Apr. 1-1969											506875.00
Oct. 1-1969											506875.00
Apr. 1-1970											506875.00
Oct. 1-1970											506875.00
Apr. 1-1971											506875.00
Oct. 1-1971											506875.00
Apr. 1-1972											506875.00
Oct. 1-1972											506875.00
Apr. 1-1973											506875.00
Oct. 1-1973											506875.00
Apr. 1-1974											506875.00
Oct. 1-1974											506875.00
Apr. 1-1975											506875.00
Oct. 1-1975											506875.00
Apr. 1-1976											506875.00
Oct. 1-1976											506875.00
Apr. 1-1977											506875.00
Oct. 1-1977											506875.00
Apr. 1-1978											506875.00
Oct. 1-1978											506875.00
Apr. 1-1979											506875.00
Oct. 1-1979											506875.00
Apr. 1-1980											506875.00
Oct. 1-1980											506875.00
Apr. 1-1981											506875.00
Oct. 1-1981											506875.00
Apr. 1-1982											506875.00
Oct. 1-1982											506875.00
Apr. 1-1983											506875.00
Oct. 1-1983											







1913	- - - - -	\$ 4,750,000
1918	- - - - -	1,000,000
1920	- - - - -	600,000
1921	(for West Extension) - - - - -	750,000
1924	(of \$5,000,000 authorized) - - - - -	4,000,000
Total		\$ 11,100,000

These bonds mature throughout the period 1914 to 1944, as shown in Table 1. Of the total amount of bonds, \$3,082,000 had been retired and \$8,018,000 were still outstanding on January 2, 1933. The best figures obtainable indicate that assessed benefits approved by the court amount to approximately \$13,807,000.

#### OVERLAPPING DISTRICTS

Because of the existence of other drainage districts, or because of the necessity for additional drainage facilities, certain lands in the Little River Drainage District are subject to liens for bonds issued by other drainage and levee districts in addition to their obligations to the Little River Drainage District.

Of the 463,350 assessed acres in the Little River Drainage District, 153,423 acres are also in other districts. Table 2 lists these overlapping districts and shows the number of acres assessed in each district by the Little River Drainage District. With the exception of those in Elk Chute Drainage District and St. Francis Levee District, most of the lands in overlapping districts assessed by the Little River Drainage District are improved and are not assessed maximum rates by the Little River District. Under ordinary conditions those lands would have sufficient income to pay overlapping district taxes provided such taxes are reduced in proportion with reductions suggested hereinafter for the Little River District. Practically all the lands of the Elk Chute Drainage District and nearly

Table 2

## Districts Overlapping Little River Drainage District

Name of District	County	Area assessed also in Little River Drainage District						Average		
		Total	Improved	Unimproved	Class A	Class B	Class C	Class D	drainage tax	1/
		Acres	Acres	Acres	land	land	land	land		
Levee District #7	Dunklin	704	598	106	-	704	-	-	\$0.61	
Drainage District #36	"	7,327	5,841	1,486	3,535	3,497	295	-	0.66	
" #10	New Madrid	2,033	1,838	195	-	2,033	-	-	0.92	
" #12	"	5,127	4,837	290	-	3,300	1,827	-	0.42	
" #20	"	418	418	-	-	418	-	-	0.64	
" #23	"	6,481	6,152	329	5,877	604	-	-	0.46	
" #26	"	5,710	5,160	550	1,263	4,447	-	-	0.05	
" #28	"	5,467	4,762	705	4,295	1,172	-	-	0.54	
" #29 & 29 redug	"	402	342	60	402	-	-	-	1.88	
" #33	"	1,643	1,933	10	425	1,218	-	-	1.90	
" #35	"	1,996	716	1,280	124	592	1,280	-	0.88	
" #36	"	1,185	131	1,054	-	85	1,100	-	1.00	
" #38	"	5,734	5,175	559	2,084	3,650	-	-	0.61	
" #8 & 8 redug	Pemiscot	315	274	41	-	315	-	-	1.83	
" #12	Scott	1,658	1,623	35	1,658	-	-	-	1.65	
" #36	Stoddard	1,183	761	422	273	570	340	-	0.74	
Elk Chute Drainage District		21,331	261	21,070	-	226	12,959	8,146	0.83	
St. Francis Levee District		118,195	61,144	57,051	14,176	56,885	38,449	8,635	0.59	
Total overlapping		186,909	101,666	85,243	34,112	79,716	56,250	16,831	0.63	
In Little River and one other district		120,127	68,769	51,358	27,117	63,966	28,504	540	2/ 0.61	
Two " districts		32,705	10,707	21,998	6,219	5,381	12,959	8,146	2/ 1.32	
Three " districts		591	531	60	402	189	-	-	2/ 2.40	
Total assessed in Little River districts and some other district		153,423	80,007	73,416	33,738	69,536	41,463	8,686	2/ 0.77	

1/ Average for overlapping acreage, levied by district named.

2/ Average for overlapping acreage, levied by other than Little River district.



half of those in the St. Francis Levee District are in cut-over timber from which no income can be obtained. Some tracts of land are assessed for drainage in three or four districts. An examination of the records indicates that on some of these lands in the overlapping districts the yearly drainage tax amounts to as much as \$4.00 per acre in addition to state and county taxes. A summary of the overlapping is given in Table 2. It is evident that some agreement will have to be reached with the overlapping districts if any plan of refinancing the Little River Drainage District is to be successful.

#### Economic Situation

The financial affairs of the district are in chaotic condition because of a combination of reasons. The original development of the district was fostered largely by lumber companies in order to dispose of their cut-over lands. As a result of speculation in land because of war-time prices of farm products, the market value of uncleared cut-over lands increased from a few dollars per acre in 1909 to as high as \$75 per acre in 1919. During this period about one-half of the land was cleared and then the need for more complete drainage in many parts of the district became apparent. Money brought into the district by settlers and land speculators, investments in farm mortgages by insurance companies and banks, together with current income and use of reserve funds enabled the district to meet all obligations until October 1, 1929, when it first defaulted on its bonds. Many factors have contributed to the insolvency of this district, but the primary difficulty has been over capitalization

coupled with a protracted period of low prices of all farm products.

Following the 1924 bond issues of \$4,000,000 for extending the drainage system under what is known as the Equalizing Plan, drainage taxes together with state and county taxes for road and school development became so high and the outlook so disheartening that more than 90 percent of the land of the district is now tax delinquent and subject to sale. For the year 1932 only \$18,582.31 of drainage taxes were paid, out of a total levy of \$961,817.21 - less than 2 percent.

The assessments levied for drainage benefits were made in accordance with the improvement in drainage conditions that would result from the construction of the ditches and levees, and not in accordance with the ability of the land to pay. As a result, much of the unimproved land, from which no income can be obtained, has been assessed at the maximum rate and must pay the annual maximum drainage tax of \$2.83 per acre in the original district and \$3.32 in the West Extension. It is useless to expect that such a drainage tax will be paid by this class of land, in addition to the taxes levied for local and state purposes.

With the situation as it is, it is not apparent how conditions in this district can be appreciably bettered, with prices as they are, unless the bondholders and the landowners mutually agree to some readjustment of the tax burden that will be practical of application and as equitable to all parties concerned as may be devised.



Attempts at Refinancing

In the fall of 1929, after the Little River Drainage District defaulted on its bond obligations due October 1, 1929, two bondholders' protective committees were organized, one for the original district and the other for the West Extension. These committees realized that the landowners could not meet the contract requirements of the district, and after negotiations with a landowners' committee an agreement was executed that stipulated that the drainage taxes then delinquent would be settled on the following basis:

30 percent of amount due, plus penalties, for 1927 and prior years	
40 " " " " " " " " 1928	
50 " " " " " " " " 1929	

The agreement provided also that the Board of Supervisors of the district might levy taxes in reduced amounts as follows:

<u>Year</u>	<u>Agreed amount</u>	<u>Regular amount</u>
1930	\$400,000	\$862,488
1931	450,000	862,477
1932	500,000	863,395
1933	550,000	858,395
1934	600,000	892,100

Taxes were levied in accordance with the above agreement for the years 1930 and 1931, but only slightly more than half of these taxes were paid. While unsatisfactory economic and agricultural conditions may have contributed to prevent functioning of the agreement, it is believed that the primary cause of failure was the fact that the tax burden was not adjusted in accordance with the productivity or non-productivity of the land, nor was any assurance given the landowner that by payment of his taxes at the reduced rate he was permanently settling the full amount of

his annual drainage tax. Under such conditions a landowner had little incentive to pay his taxes.

During the fall of 1931 the bondholders' protective committees and members of the districts' Board of Supervisors met and agreed in principle that the payment of drainage assessments should be based on the ability of the land to pay from income, real or potential. It was decided that a survey and classification of the lands in the district should be made. Seven men familiar with the physical conditions and quality of the land within the District classified the land into four different groups in accordance with its relative ability to pay taxes. An elaborate report was prepared by representatives of the district recommending certain rates of assessment for different classes of land. The bondholders' protective committee and the district representatives failed to agree upon the recommendation made in the report, and this failure led to a request that an investigation and report be made by disinterested parties.

#### DEVELOPMENT OF PLAN OF REHABILITATION

##### Basis for Financial Settlement

Any plans for refinancing the Little River Drainage District can be accomplished only through cooperation of all interested parties and to be successful must be acceptable both to bondholders and landowners. Attempts have been made in the past to reach an agreement, but such have been unsuccessful ~~due~~ chiefly because of failure to recognize the fact that any plan of settlement must be based on the ability of the land to pay. It must be recognized that in the absence of speculation, the land-



owners in the district can pay no more for drainage or other improvements than they can get from the land. Blood cannot be drawn from a turnip, and when funds are spent up to the earning capacity of the land nothing remains but the principal of the investment. In any plan of settlement, it is of vital importance also that adequate provision be made for maintaining existing drainage improvements in order that crops may be successfully grown and the income of the land be maintained. The settlement of delinquent taxes is a matter for compromise between bondholders and landowners, but must be of such character as will not endanger future payments.

#### Land Classification

Numerous inspection trips over the district, one of them in company with a representative of the Bureau of Chemistry and Soils of the Department of Agriculture, indicated that the land classification mentioned above (p.10 ) had, on the whole, been well made and could be used as an equitable basis for apportioning drainage taxes according to the ability of the land to pay. This conclusion was further justified by the crop records which show that the yields vary in accordance with the classification of the land, and by the assessments for state and county taxes which average as follows:

#### Average state and county taxes, 1930

Class A land	\$0.72 per acre
" B "	.58 " "
" C "	.43 " "

The standards of classification were soil fertility, utility, and desirability. Lands of the best grade, well situated with respect to highways, schools and shipping points, well drained and with the best

improvements were classified "A"; less fertile and desirable lands, "B"; and the least fertile and desirable, or inadequately drained, "C". Waste lands and lands not subject to drainage, except at prohibitive cost, were classed as "D". A supplementary classification of lands fully cleared, partly cleared, and uncleared was made by first plotting the results of air surveys and then checking each subdivision in the field. The results of these classifications are shown in Figure 1.

In the original classification the land was divided into ten separate classes as follows:

Class	A-1	Fully improved
"	A-2	Partly "
"	A-3	Unimproved (cut-over timber)
"	B-1	Fully improved
"	B-2	Partly "
"	B-3	Unimproved (cut-over timber)
"	C-1	Fully improved
"	C-2	Partly "
"	C-3	Unimproved (cut-over timber)
"	D	Waste land.

In the above classification the partly improved land in each class was land that was cleared and cultivated but from which the stumps had not been removed. A study of the crop records of such land indicates that the net return to the landowner is practically the same as from the fully improved land from which stumps have been removed. For this reason it has been deemed advisable, for the purposes of this report, to combine the fully improved and partly improved land in each class under one heading and to divide the lands in the District into seven groups as follows:



Class	A-1	Cultivated
"	A-2	Unimproved (cut-over timber)
"	B-1	Cultivated
"	B-2	Unimproved (cut-over timber)
"	C-1	Cultivated
"	C-2	Unimproved (cut-over timber)
"	D	Waste land

The acreage in each of the seven classes is given by counties in Table 3.

#### Method of Determining Crop Production

Most of the land in Little River Drainage District is farmed by tenants, estimates in various portions of the District ranging from 80 up to 95 per cent of the area in 1933. Much of the land is in the hands of banks and insurance companies. Through the cooperation of these organizations and individual owners and their representatives, crop yield schedules were obtained on farms embracing 17,369 acres in 1931 and 18,353 acres in 1932, showing for each farm the legal description, acreage in each crop, landlord's share of the crop yield, and amount of money received by the landlord from each crop. Each schedule purported to cover all land in the district controlled by the owner. It was found necessary to discard a number of schedules because of uncertainties in the items reported.

The custom in almost all cases is for the landlord to take one-fourth of the output of cotton, one-half of the hay, and one-third of all other crops; and to receive for pasture a cash rental which in many cases includes "privilege rent", or compensation for the use of farm buildings.

Actual yields per acre of farm crops were ascertained from the

Table 3 - Classification of lands assessed in Little River Drainage District.

County	Class of land										Total	
	A-1	A-2	B-1	B-2	C-1	C-2	D	All assessed	Cleared land	Uncleared land	Amount of all	Acres
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Per cent	land		
Bollinger	- -	- -	1,799	167	6,761	13,995	291	23,013	8,560	37		14,453
Cape Girardeau	9,489	1,275	5,064	2,331	1,108	4,185	- -	24,052	15,661	65		8,391
Dunklin	3,980	459	6,370	7,909	193	17,000	8,611	44,582	10,543	24		34,039
New Madrid	29,324	3,507	51,887	29,571	7,386	16,349	771	138,795	88,597	64		50,198
Pemiscot	7,453	509	27,992	19,587	3,219	13,353	40	72,153	38,664	54		33,489
Scott	19,371	2,459	6,222	4,430	242	1,652	- -	34,376	25,835	75		8,541
Stoddard	17,320	2,127	32,205	28,721	14,679	30,750	667	126,379	64,114	51		62,265
Totals	86,847	10,936	131,532	92,776	33,588	97,284	10,380	463,350	251,974	54		211,376
Percentage of assessed area in district	19	2	29	20	7	21	2	100	54	- -		46



schedules by multiplying the landlord's share by the proper factor (3 in case of corn, 4 in case of cotton, etc.), and dividing the aggregate number of bushels of corn, pounds of seed cotton, etc., by the aggregate number of acres on which produced. Each schedule was referred by its legal description to the land classification map (Fig. 1), marked with its land class, and segregated accordingly for purposes of tabulation.

On the whole, it is felt that the crop data fairly represent the local farm situation; and that they may be taken as showing the present productive capacity of the lands. The present type of farming is well established in the district and is not likely to change radically in the immediate future.

It is possible, of course, that these schedules represent better-than-average conditions, because they were obtained on lands on which loans had been made and loans supposedly have been made on the better lands. A comparison of yields inside the district with the average yields on nearby lands outside the district indicates that the lands are about average for southeastern Missouri.

#### Acreage in Various Crops

The schedules for each tract show separately the acreages in corn, cotton, wheat, oats, hay, beans, pasture, other crops, the acreage, uncultivated but tillable, and the acreage, not tillable (uncleared timber land, undrained swamp, and waste land). The total acres on which crop production data were obtained for 1931 and 1932 were 17,369 acres and 18,353 acres, respectively. In addition, schedules were secured for those years on 20,845 acres in 1931 and 29,996 acres in 1932, containing reliable data

on the acreage in the various crops, but not on crop yields. Thus the total area included in schedules for 1931 and 1932 which could be used for determining crop distribution was 38,214 acres and 48,349 acres respectively, averaging approximately 10 percent of the area assessed in the original district.

Distribution of crops is quite different in the northern portion from that in the southern portion of the District. In the northern area general farming predominates; in the southern, cotton. In Cape Girardeau County, the northernmost, no cotton was reported, whereas Pemiscot County, in the southeast, showed the largest percentage of tillable land in cotton. Dunklin County land within the district shows more corn than cotton on the schedules, although in that area good crops of cotton are grown on adequately drained land. Intermediate counties show both cotton and general farming. In explaining these geographical differences in crop distribution, it may be stated that the Little River Drainage District lies on the northern border of the cotton-growing area of the Mississippi Valley, and that the district is 90 miles long from north to south.

The schedules obtained were well distributed over the district, so that it was practical to compute the total area of each crop in the district on the assumption that each crop comprised the same proportion of all tillable lands in the district as of the tillable lands covered by the schedules for the years 1931 and 1932. The acreages for the two years were averaged and the results are shown in Table 4. Thus, as the aggregate area in corn shown by all schedules was 47 percent of the aggregate tillable area on the schedules, the total area in corn within



the District boundaries was computed as 47 percent of the total tillable acreages. The computed total area of all crops within the District were obtained in a similar manner.

Hypothetical Acre

To arrive at the ability of the land to pay fixed charges under existing conditions, it was necessary not only to know the total areas in the several crops but also to establish a basis for computing the average producing value of the land. The simplest way to do this was to assume the various crops divided on each acre of tillable land in the same proportions for the total district, as shown in Table 4. The crop distribution on such a hypothetical acre also is shown in Table 4. The amount of any crop on the hypothetical acre was computed by dividing the total acreage of that crop in the district by the total acreage tillable. With corn, for example, the 119,156 total acres in that crop divided by the total 251,974 acres tillable gave 0.47289 as the part of the hypothetical acre in corn. The proportion of the hypothetical acre in other crops is similarly calculated. Idle land is land occupied by buildings, gardens, etc., generally furnished the tenant and from which the landlord derives no income.

Table 4 - Acreages of principal crops in Little River Drainage District and distribution of crops on hypothetical acre 1/  
(Based on Crop Schedules for 1931 and 1932)

Crop	Total in District Acres	Hypothetical acre
Corn	119,156	0.47289
Cotton	37,307	.14806
Wheat	28,224	.11201
Oats	10,091	.04005
Hay	21,466	.08519
Beans	7,667	.03043
Pasture	8,822	.03501
Other crops	10,102	.04009
Idle	9,139	.03627
Total tillable	251,974	1.00000
Not tillable (uncleared)	211,376	-----
Total land assessed	463,350	-----

1/ See text, page 17



Yields of Different Classes of Land

For studying crop production, the schedules obtained were sorted by years and classes of land and the average yield of each crop for each class of land was determined. The results obtained are given in columns 5 and 7 of Table 5.

Production in 1932 was, in most cases, less than in 1931, as evidenced by the results secured from the schedules. The decrease is attributed to less favorable rainfall distribution in 1932. Growing conditions in the District for the past several years, as recorded by careful observers, have been as follows:

1923 - Fairly seasonable  
1924 - " " "  
1925 - Unusually good; yield great; harvest poor  
on account of late rains.  
1926 - Enormous yield; low prices,  
1927 - Very wet; short yield  
1928 - Unseasonable on account of rains  
1929 - Fairly good  
1930 - Very dry  
1931 - Seasonable  
1932 - Generally seasonable; some drought affecting some sections; 70 per cent of district affected by drought; good crops from Kennett - Portageville south.

Since some of the lands suffer from drought relatively more than others, it is thought that an average of the two-year period 1931-1932 will give a more accurate picture of crop yields than would either year alone. Such weighted average yields are shown in column 9 of Table 5. The weighted average yield of each crop for the District, regardless of class of land, is shown in column 10 of Table 5. The crop indices of variation in yield according to class of land are shown in column 11 of Table 5. These indices were obtained by dividing the average yield on each class of land as given in column 9 by the average yield for all classes as given in column 10. Thus, when the average yield of a crop has been obtained for the District as a whole for any year, the yield

Table 5.- Crop Yields and Crop Indices by Classes of Land in Little River Drainage District, 1931-1932

Crop	Unit	Class	Acres	1931		1932		Weighted average		Index of crop yield
				Average	Total yield	Average	Total yield	yield per acre	yield	
age	for class	yield	for class	1931 - 1932 crops						
yield		per acre		By	For	class of	district			
per acre				land						
Corn	Bu.	A	41,069	31.2	1,281,353	26.1	1,071,901	28.7	1.1666	
	"	B	62,203	26.7	1,660,820	21.9	1,362,246	24.3	0.9878	
	"	C	15,884	17.1	271,616	12.9	204,904	15.0	0.6093	
Totals and:										
Averages			119,156	27.0	3,213,789	22.1	2,639,051	24.6		
Cotton	Lbs.	A	12,859	1416	18,208,344	1340	17,231,060	1378	1.0989	
	seed	B	19,476	1288	25,085,088	1200	23,371,200	1244	0.9920	
	cotton	C	4,972	1140	5,668,080	804	3,997,438	972	0.7751	
Totals and:										
Averages			37,307	1312	48,961,512	1195	44,599,748	1254		
Wheat	Bu.	A	9,728	25.2	245,146	13.2	128,410	19.2	1.0847	
	"	B	14,734	26.2	386,031	12.0	176,808	19.1	1.0791	
	"	C	3,762	13.5	50,787	3.6	13,543	8.5	0.4802	
Totals and:										
Averages			28,224	24.1	681,964	11.3	318,761	17.7		
Oats	Bu.	A	3,478	35.7	124,165	21.6	75,125	28.7	1.1811	
	"	B	5,268	29.7	156,460	22.2	116,950	26.0	1.0700	
	"	C	1,345	13.8	18,561	0	0	6.9	0.2840	
Totals and:										
Averages			10,091	29.6	299,186	19.0	192,075	24.3		
Hay	Tons	A	7,398	1.33	9,839	0.89	6,584	1.11	1.2065	
	"	B	11,206	1.07	11,990	0.66	7,396	.86	0.9348	
	"	C	2,862	0.69	1,975	0.61	1,746	.65	0.7065	
Totals and:										
Averages			21,466	1.11	23,804	.73	15,726	.92		
Beans	Bu.	A	2,642	13.8	36,460	6.9	18,230	10.4	1.5522	
	"	B	4,003	5.2	20,816	4.8	19,214	5.0	0.7463	
	"	C	1,022	7.5	7,665	0	0	3.8		
Totals and:										
Averages			7,667	8.5	64,941	4.9	37,444	6.7		



for the various classes of land can be computed by multiplying such average yield by the crop index for that class of land shown in column 11 of Table 5. The crop indices, which are based on two years' records of crop yields, are believed to fairly represent the ratio of productive ability of the different classes of land and in this report are used for that purpose in lieu of records covering a longer period of time.

#### CAPACITY OF THE LAND TO PAY

With 80 to 95 percent of the tillable land in the District farmed by tenants, it is feasible to use the landlord's share as the measure of capacity to pay charges against the lands. This rental, if accurately determined, can be properly applied to all tillable land in the District, as it represents the entire rental obtained by the landlord and is the source from which his fixed charges of taxes and interest and his management and upkeep expenses must be paid.

The total capacity of the district to pay in any year, according to this method, is the cash value of  $1/4$  of all the seed-cotton produced that year, plus  $1/2$  of all the loose hay, plus  $1/3$  of all other crops, plus all pasture rentals. "Privileged rent," which is included in some of the pasture rentals, represents income from the land and therefore may properly be included in determining the capacity to pay.

#### Income from Cultivated Lands

To compute the income from various classes of cultivated land for any particular year it is necessary to compute the income of the hypothetical acre for that year. Table 6 shows the income of the hypothetical acre for the three classes of cultivated land for the year 1931. Column 1 shows the crop distribution for the hypothetical acre as developed and used in this report. Column 2 gives the indices of yield for the various crops, which is the relation of yields on the three classes of land as compared with the

Table 6.- Computed 1931 crop income for the hypothetical acre

	1	2	3	4	5	6	7
Crop	: Unit	: Crop distribution: on hypothetical acre	: Index of yield per acre for district	: Average yield per acre for land class	: Computed yield per acre received by farmers	: Price per unit: value of crops on hypothetical acre	: Total crop rent income from hypothetical acre
CLASS A-1 LAND							
Corn	: Bu.	: 0.47289	: 1.1666	: 27.0	: 32	: \$0.23	: \$3.48
Seed cotton	: lbs.	: .14806	: 1.0989	: 1312.0	: 1442	: .016	: 3.42
Wheat	: Bu.	: .11201	: 1.0847	: 24.1	: 26	: .40	: 1.16
Oats	: Bu.	: .04005	: 1.1811	: 29.6	: 35	: .16	: .23
Hay (loose)	: Tons	: .08519	: 1.2065	: 1.11	: 1.3	: 4.65	: .51
Beans	: Bu.	: .03043	: 1.5522	: 8.5	: 13	: .47	: .18
Pasture	: Dol.	: .03501	: ---	: ---	: \$ 2.94	: -	: -
Other crops	: "	: .04009	: ---	: ---	: 9.81	: -	: .39
Idle	: -	: .03627	: ---	: ---	: -	: -	: -
	: 1.00000						Total Class A-1 crop rent income \$3.02
CLASS B-1 LAND							
Corn	: Bu.	: 0.47289	: 0.9878	: 27.0	: 27	: 0.23	: 2.94
Seed cotton	: Lbs.	: .14806	: 0.9920	: 1312.0	: 1302	: .016	: 3.09
Wheat	: Bu.	: .11201	: 1.0791	: 24.1	: 26	: .40	: 1.16
Oats	: "	: .04005	: 1.0700	: 29.6	: 32	: .16	: .21
Hay	: Tons	: .08519	: 0.9348	: 1.11	: 1.0	: 4.65	: .40
Beans	: Bu.	: .03043	: 0.7463	: 8.5	: 6	: .47	: .09
Pasture	: Dol.	: .03501	: ---	: --	: \$ 2.85	: --	: --
Other Crops	: "	: .04009	: ---	: --	: 7.62	: --	: .30
Idle	: -	: .03627	: ---	: --	: ---	: --	: --
	: 1.00000						Total Class B-1 crop rent income \$2.64
CLASS C-1 LAND							
Corn	: Bu.	: 0.47289	: 0.6098	: 27.0	: 17	: 0.23	: 1.85
Seed cotton	: Lbs.	: .14806	: 0.7751	: 1312.0	: 1017	: .016	: 2.41
Wheat	: Bu.	: .11201	: 0.4802	: 24.1	: 12	: .40	: .54
Oats	: "	: .04005	: 0.2840	: 29.6	: 8	: .16	: .05
Hay	: Tons	: .08519	: 0.7065	: 1.11	: 0.8	: 4.65	: .32
Beans	: Bu.	: .03043	: 0.5672	: 8.5	: 5	: .47	: .07
Pasture	: Dol.	: .03501	: ---	: --	: \$ 1.70	: --	: --
Other crops	: "	: .04009	: ---	: --	: 5.10	: --	: .21
Idle	: -	: .03627	: ---	: --	: ---	: --	: --
	: 1.00000						Total Class C-1 crop rent income \$1.73



average yield for the district, as shown in Table 5. Column 3 gives the average yield per acre for the district for each crop as determined by the crop schedules for that year. Column 4 gives the computed yield per acre for each crop for each class of land, obtained by multiplying the figures of Column 2 and Column 3. Column 5 gives the farm prices received for the 1931 crops as shown by the schedules. Column 6 gives the gross return received from each crop, obtained by multiplying the figures of Column 4 by those of Column 5. Column 7 is the landlord's share, or the crop rent income from the hypothetical acre, which was obtained by taking  $1/4$  the amounts of Column 6 in the case of cotton;  $1/2$  in the case of loose hay; and  $1/3$  in the case of all other crops. The income shown from pasture is the cash income received by the owner and includes the so-called privilege rent.

The income of the hypothetical acre computed for 1932 is recorded in Table 7, while Table 8 illustrates what the income from the hypothetical acre for 1932 would have been had the prices for the various crops been more in line with what might reasonably be expected under conditions more nearly normal.

In Table 8, it will be noted the price has been assumed as 50 cents per bushel for corn, seed cotton as 3 cents per pound, wheat as 70 cents per bushel, etc. These prices are all less than those advocated under provisions of the Farm Relief Bill recently passed by Congress. Table 9 gives the income of the hypothetical acre for 1932, had the farm prices equalled those advocated by the Farm Relief Bill. With such prices, the net income from all Class A and Class B cultivated land, after deducting state and county taxes and operating expenses would be sufficient to pay the present maximum drainage tax. Under such conditions reductions in drainage taxes for Class A-1 and B-1 lands would not be necessary except possibly in the case of small areas in overlapping drainage districts. If the prices advocated

Table 7.-- Computed 1932 Crop Income for the Hypothetical Acre

	1	2	3	4	5	6	7
Crop	:Crop dis- tribution of on hypo- thetical acre	Index of yield district	Average yield per acre for land class	Computed yield per acre for unit received by farmers	Price per unit re- ceived by farmers	Total value of crops on hypo- thetical acre	Crop rent income from hypothet- ical acre
CLASS A-1 LAND							
Corn	:Bu. : 0.47289	: 1.1666	: 22.1	: 26	: \$0.18	: \$2.21	: \$0.74
Seed cotton	:Lbs.: .14806	: 1.0989	: 1,195.0	: 1,313	: .018	: 3.51	: .88
Wheat	:Bu. : .11201	: 1.0847	: 11.3	: 12	: .36	: .48	: .16
Oats	:Bu. : .04005	: 1.1811	: 19.0	: 22	: .14	: .12	: .04
Hay (loose)	:Tons: .08519	: 1.2065	: 0.73	: 0.9	: 4.69	: .36	: .18
Beans	:Bu. : .03043	: 1.5522	: 4.9	: 8	: .42	: .10	: .03
Pasture	:Dol.: .03501	: -	: -	: \$2.94	: -	: -	: .10
Other crops	: " : .04009	: -	: -	: 9.81	: -	: .39	: .13
Idle	: - : .03627	: -	: -	: -	: -	: -	: -
	: 1.00000					Total class A-1 Crop Rent Income	\$2.26
CLASS B-1 LAND							
Corn	:Bu. : .47289	: 0.9878	: 22.1	: 22	: 0.18	: 1.87	: .62
Seed cotton	:Lbs.: .14806	: .9920	: 1,195	: 1,185	: .018	: 3.16	: .79
Wheat	:Bu. : .11201	: 1.0791	: 11.3	: 12	: .36	: .48	: .16
Oats	:Bu. : .04005	: 1.0700	: 19.0	: 20	: .14	: .11	: .04
Hay (loose)	:Tons: .08519	: 0.9348	: 0.73	: 0.7	: 4.69	: .28	: .14
Beans	:Bu. : .03043	: 0.7463	: 4.9	: 4	: .42	: .05	: .02
Pasture	:Dol.: .03501	: -	: -	: \$2.85	: -	: -	: .10
Other crops	: " : .04009	: -	: -	: 7.62	: -	: .30	: .10
Idle	: - : .03627	: -	: -	: -	: -	: -	: -
	: 1.00000					Total class B-1 Crop Rent Income	\$1.97
CLASS C-1 LAND							
Corn	:Bu. : .47289	: 0.6098	: 22.1	: 14	: 0.18	: 1.19	: .40
Seed cotton	:Lbs.: .14806	: 0.7751	: 1,195.0	: 926	: .018	: 2.47	: .62
Wheat	:Bu. : .11201	: 0.4802	: 11.3	: 5	: .36	: .20	: .07
Oats	:Bu. : .04005	: 0.2840	: 19.0	: 5	: .14	: .03	: .01
Hay (loose)	:Tons: .08519	: 0.7065	: 0.73	: 0.5	: 4.69	: .20	: .10
Beans	:Bu. : .03043	: 0.5672	: 4.9	: 3	: .42	: .04	: .01
Pasture	:Dol.: .03501	: -	: -	: \$1.70	: -	: -	: .06
Other crops	: " : .04009	: -	: -	: 5.10	: -	: .21	: .07
Idle	: - : .03627	: -	: -	: -	: -	: -	: -
	: 1.00000					Total class C-1 Crop Rent Income	\$1.34



Table 8.- Computed Crop Income for the Hypothetical Acre using 1932  
Crop Yields and Assumed Prices for Crops Grown

	1	2	3	4	5	6	7
	:	:Crop dis-	:Index:	:Average	:Computed:	:Assumed:	:Total
Crop	:Unit:	:tribution	of	:yield per:	:yield	:price	:value of:
	:	:on hypo-	:yield:	:acre for:	:per acre:	:per unit:	:crops
	:	:thetical:	:district:	:for land:	:	:on hypo-	:cal acre
	:	:acre	:	:class	:	:thetical:	:
	:	:	:	:	:	:acre	:
CLASS A-1 LAND							
Corn	:Bu.	:0.47289	:1.1666:	22.1	:26	: \$0.50	:\$6.15
Seed cotton:	Lbs.:	.14806	:1.0989:	1195.0	:1,313	: .03	: 5.83
Wheat	:Bu.	:.11201	:1.0847:	11.3	:12	: .70	: .93
Oats	:Bu.	:.04005	:1.1811:	19.0	:22	: .35	: .31
Hay	:Tons:	.08519	:1.2065:	0.73	:0.9	: 8.00	: .61
Beans	:Bu.	:.03043	:1.5522:	4.9	:8	: .75	: .18
Pasture	:Dol.:	.03501	: -	-	: \$3.25:	-	: -
Other crops:	"	:.04009	: -	-	: \$12.00:	-	: .48
Idle	: -	:.03627	: -	-	: -	: -	: -
	:	:1.00000	:	Total Class A-1 Crop rent income \$4.56			
CLASS B-1 LAND							
Corn	:Bu.	:.47289	:0.9878:	22.1	:22	: \$0.50	:\$5.20
Seed cotton:	Lbs.:	.14806	:0.9920:	1195.0	:1,185	: .03	: 5.26
Wheat	:Bu.	:.11201	:1.0791:	11.3	:12	: .70	: .94
Oats	:Bu.	:.04005	:1.0700:	19.0	:20	: .35	: .28
Hay	:Tons:	.08519	:0.9348:	0.73	:0.7	: 8.00	: .48
Beans	:Bu.	:.03043	:0.7463:	4.9	:4	: .75	: .09
Pasture	:Dol.:	.03501	: -	-	: \$3.00	: -	: -
Other crops:	"	:.04009	: -	-	: \$9.00	: -	: .36
Idle	: -	:.03627	: -	-	: -	: -	: -
	:	:1.00000	:	Total Class B-1 crop rent income \$3.95			
CLASS C-1 LAND							
Corn	:Bu.	:.47289	:0.6098:	22.1	:14	: \$0.50	:\$3.31
Seed cotton:	Lbs.:	.14806	:0.7751:	1195.0	:926	: .03	: 4.11
Wheat	:Bu.	:.11201	:0.4802:	11.3	:5	: .70	: .39
Oats	:Bu.	:.04005	:0.2840:	19.0	:5	: .35	: .07
Hay	:Tons:	.08519	:0.7065:	0.73	:0.5	: 8.00	: .34
Beans	:Bu.	:.03043	:0.5672:	4.9	:3	: .75	: .07
Pasture	:Dol.:	.03501	: -	-	: \$2.00	: -	: -
Other crops:	"	:.04009	: -	-	: \$6.00	: -	: .24
Idle	: -	:.03627	: -	-	: -	: -	: -
	:	:1.00000	:	Total Class C-1 crop rent income \$2.62			

in the Farm Relief Bill had been obtained in 1931 all of the cultivated land in the district could have paid the full drainage tax.

#### Uncleared or Non-producing Lands

Little or no income, obviously, is derived from uncleared or non-producing lands. Nevertheless, they are benefited by drainage and are assessed and should bear some share of the tax burden, the amount to be agreed upon by negotiation between the interested parties. Amounts which appear equitable under present circumstances are as follows:

Class A-2 Lands constitute the smallest group in the district - less than 11,000 acres, or about 2-1/2 per cent. of the whole area. These lands are mostly distributed throughout the district in small tracts ranging from a few acres up to a quarter-section and are generally contiguous to improved land, highways, and ditches. While no crop income can be obtained from uncleared land, a drainage tax of 75 cents per acre is proposed with the idea that such a tax will not ordinarily prove unduly burdensome to individual owners yet will be high enough to induce improving and converting those tracts into Class A-1 land in order that the owner may obtain increased income with which to pay the taxes. Such a development will also result in increased income to the bondholder.

Class B-2 Lands in the district comprise nearly 93,000 acres, from which little immediate income may be expected. A large part of this is poorly located with respect to roads and will require, in addition to the cost of clearing, considerable outlay for farm ditches before it can be satisfactorily cultivated. Also, a large portion of this land is included in the St. Francis Levee District. In view of the high average state and county taxes against most of this land, 58 cents per acre for 1930, there seems little reason to hope that it can pay drainage assessments of any considerable amount. In fact, there is grave doubt that even state and county taxes will be paid unless such taxes are materially reduced.



Considering all these facts, it is deemed ill-advised at this time to assess drainage taxes in excess of 25 cents per acre against this class of land. This amount, together with the state and county taxes, should be sufficient to cause the owners of this type of land to expedite development in order that the land may produce income. Such development would change the classification from B-2 to B-1; and in the end both land owner and bond holder would be benefited.

Class C-2 Lands amount to more than 97,000 acres, about 21 per cent of the district. They consist largely of cut-over swamp land of inferior soil types, in large part poorly drained. It is proposed that there be levied against such lands a maintenance charge of 15 cents per acre, as it is equitable that all potential agricultural lands within the district should bear some share of the cost of maintaining existing ditches.

#### Income Available for Drainage Taxes

General and school taxes are liens prior to drainage taxes, and it is therefore necessary that payment be made from the owner's income from the land. Mortgages outstanding against lands in Little River Drainage District are secondary to the drainage taxes. No attempt has been made to determine the amount of mortgages outstanding because numerous foreclosures have been made since the available data were obtained, and because practically all of the mortgages are delinquent and subject to foreclosure. The mortgagees are rapidly becoming the landowners. In view of this condition, no provision is made in this report for the payment of mortgages.

The records for 1930, the latest available, indicate that the average general and school taxes on Class A land were 72 cents per acre, on Class B land 58 cents per acre, and on Class C land 43 cents per acre. There was no noticeable difference in the rates of assessment for cleared and uncleared lands.

In addition to general and school taxes, the landowner has to spend money each year in managing the land, marketing his share of the crops, and maintaining the farm improvements. These expenses must be paid from the income from the land. No reliable data were collected as to average costs of farm management and repairs. The amount to be allowed is a matter of agreement between the interested parties. In this report 75 cents per acre of cultivated land has been assumed for the cost of those items.

The maximum drainage tax that can be obtained, including that necessary for maintenance of the drainage works, is in any year the crop rent income (see Tables 6 to 9) less the sum of the general and school taxes and the cost of farm management and up-keep. Computation of this drainage tax for the years 1931 and 1932 is shown in columns 4 to 7 of Table 10. However, it is not possible to calculate the total amount to be obtained from any particular class of land by multiplying the number of acres in that class by the rent income determined for the hypothetical acre and deducting the overhead (general and school taxes and management and farm maintenance), for the following reason.

In some instances the drainage tax that can legally be collected will be less than the net income per acre, because of small assessed benefits. For example, the 1932 drainage tax levy in the Little River District was 7.07 per cent for the original district and 8.30 per cent for the west extension. Some lands in all the classes have total assessed benefits of but \$4.00 per acre, which limits the legal tax on those particular lands to 7.07 per cent of \$4.00 or 28 cents per acre in the original district, and to 8.30 per cent of \$4.00 or 33 cents in the west extension. Regardless of the fact that the net earnings of the Class A-1 lands for 1932, less the general and school taxes and the 75 cents per acre assumed management costs, totaled 79 cents per acre, (Table 10, column 7), the maximum tax that could



Table 9.- Computed Crop Income for the Hypothetical Acre Using  
1932 Crop Yield and Prices Advocated under Farm Relief  
Bill

	1	2	3	4	5	6	7	
Crop	:Unit: of yield:	Crop :distri- bution on: hypothetical acre	:Index : of yield:	Average :yield per acre: for dis- trict	:Computed: yield per acre: for land: classes	:Assumed: price per unit	:Total :value of: crops on: hypothetical acre	:Crop :rent :income from: hypo- thetical acre
CLASS A-1 LAND								
Corn	:Bu. :	0.47289	:1.1666:	22.1	: 26:	\$0.60	: \$7.38	: \$2.46
Seed cotton	:Lbs. :	.14806	:1.0989:	1195.0	: 1313:	.043	: 8.36	: 2.09
Wheat	:Bu. :	.11201	:1.0847:	11.3	: 12:	.92	: 1.24	: .41
Oats	: " :	.04005	:1.1811:	19.0	: 22:	.40	: .35	: .12
Hay	:Tons:	.08519	:1.2065:	0.73	: 0.9:	10.00	: .77	: .38
Beans	:Bu. :	.03043	:1.5522:	4.9	: 8	: 1.00	: .24	: .08
Pasture	:Dol.:	.03501	: - :	-	: \$3.25	: -	: -	: .11
Other crops	: " :	.04009	: - :	-	: 12.00	: -	: .48	: .16
Idle	: - :	.03627	: - :	-	: -	: -	: -	: -
		1.00000		Total Class A-1 crop rent income				5.81
CLASS B-1 LAND								
Corn	:Bu. :	.47289	:0.9878:	22.1	: 22	: .60	: 6.24	: 2.08
Seed cotton	:Lbs. :	.14806	:0.9920:	1195.0	: 1185	: .043	: 7.54	: 1.88
Wheat	:Bu. :	.11201	:1.0791:	11.3	: 12	: .92	: 1.24	: .41
Oats	: " :	.04005	:1.0700:	19.0	: 20	: .40	: .32	: .11
Hay	:Tons:	.08519	:0.9348:	0.73	: 0.7:	10.00	: .60	: .30
Beans	:Bu. :	.03043	:0.7463:	4.9	: 4	: 1.00	: .12	: .04
Pasture	:Dol.:	.03501	: - :	-	: 3.00:	: -	: -	: .11
Other crops	: " :	.04009	: - :	-	: 9.00:	: -	: .36	: .12
Idle	: - :	.03627	: - :	-	: -	: -	: -	: -
		1.00000		Total class B-1 crop rent income				5.05
CLASS C-1 LAND								
Corn	:Bu. :	.47289	:0.6098:	22.1	: 14	: .60	: 3.97	: 1.32
Seed cotton	:Lbs. :	.14806	:0.7751:	1195.0	: 926	: .043	: 5.90	: 1.48
Wheat	:Bu. :	.11201	:0.4802:	11.3	: 5	: .92	: .52	: .17
Oats	: " :	.04005	:0.2840:	19.0	: 5	: .40	: .08	: .03
Hay	:Tons:	.08519	:0.7065:	0.73	: 0.5	: 10.00	: .43	: .21
Beans	:Bu. :	.03043	:0.5672:	4.9	: 3	: 1.00	: .09	: .03
Pasture	:Dol.:	.03501	: - :	-	: 2	: -	: -	: .07
Other crops	: " :	.04009	: - :	-	: 6	: -	: .24	: .08
Idle	: - :	.03627	: - :	-	: -	: -	: -	: -
		1.00000		Total Class C-1 crop rent income				3.39

Table 10.- Computed Drainage Taxes

1	2	3	4	5	6	7	8
Year	:Land :		:Rent income:	:Allowance:	:General:	:Maximum:	:Total amount
	:class:	:Acreage	:from hypo-	:for man-	:and	:drainage:	:available for
	:	:	:thetical	:agement	:school	:tax	:drainage taxes
	:	:	:acre	:and re-	:taxes,	:rate,	:including
	:	:	:	:pairs, per:	:per	:per acre:	:maintenance
	:	:	:	:acre	:acre	:	:
1931	:A-1	: 86,847	: \$3.02	: \$0.75	: \$0.72	: \$1.55	: \$115,000.00
	:A-2	: 10,936	: -	: -	: .72	: .75	: 8,000.00
(Table 6:	:B-1	: 131,539	: 2.64	: .75	: .58	: 1.31	: 160,000.00
	:B-2	: 92,776	: -	: -	: .58	: .25	: 23,194.00
	:C-1	: 33,588	: 1.73	: .75	: .43	: .55	: 18,400.00
	:C-2	: 97,284	: -	: -	: .43	: .15	: 14,593.00
Total	:	: 452,970	:	:	:	:	: 339,187.00
1932	:A-1	: 86,847	: 2.26	: 0.75	: 0.72	: 0.79	: 63,000.00
	:A-2	: 10,936	: -	: -	: .72	: .75	: 8,000.00
(Table 7:	:B-1	: 131,539	: 1.97	: .75	: .58	: .64	: 80,000.00
	:B-2	: 92,776	: -	: -	: .58	: .25	: 23,194.00
	:C-1	: 33,588	: 1.34	: .75	: .43	: .16	: 5,374.00
	:C-2	: 97,284	: -	: -	: .43	: .15	: 14,593.00
Total	:	: 452,970	:	:	:	:	: 194,161.00
1932	:A-1	: 86,847	: 4.56	: 0.75	: 0.72	: 2.83	: 166,960.00
yields,	:A-2	: 10,936	: -	: -	: .72	: .75	: 8,000.00
assumed:	:B-1	: 131,539	: 3.95	: .75	: .58	: 2.62	: 265,000.00
prices	:B-2	: 92,776	: -	: -	: .58	: .25	: 23,194.00
(Table 8:	:C-1	: 33,588	: 2.62	: .75	: .43	: 1.44	: 39,000.00
	:C-2	: 97,284	: -	: -	: .43	: .15	: 14,593.00
Total	:	: 452,970	:	:	:	:	: 516,747.00
1932	:A-1	: 86,847	: 5.81	: 0.75	: 0.72	: 2.83	: 166,960.00
yields,	:A-2	: 10,936	: -	: -	: .72	: .75	: 8,000.00
pre-war:	:B-1	: 131,539	: 5.05	: .75	: .58	: 2.83	: 278,730.00
prices	:B-2	: 92,776	: -	: -	: .58	: .25	: 23,194.00
(Table 9:	:C-1	: 33,588	: 3.39	: .75	: .43	: 2.21	: 45,500.00
	:C-2	: 97,284	: -	: -	: .43	: .15	: 14,593.00
Total	:	: 452,970	:	:	:	:	: 536,977.00



legally be levied against the land assessed \$4.00 benefits was 28 cents per acre in the original district. Where the assessed benefits against a tract were \$40.00 per acre, the legal tax was 7.07 per cent of \$40.00 or \$2.83 in the original district and 8.30 per cent of \$40.00 or \$3.32 in the west extension. In these cases the drainage tax collected from the land under the proposed plan would be 79 cents per acre as stated above.

To obtain the amount available for drainage taxes for any particular class of land, it is necessary to go through the tax records of the district, and, where the legal annual tax against a parcel of land exceeds the net income from the land, to reduce the amount of tax to such net income. Where the net income exceeds the legal drainage tax, the lands would pay the full legal amount. (The net income referred to is, per acre, the crop rent income from the hypothetical acre less the general and school taxes and allowance for farm management and repairs.) This procedure was followed in computing the amounts that would have been available under the proposed plan for the years 1931 and 1932, and also for 1932 with prices of farm products assumed as in Tables 8 and 9 which are more than double those actually received. Those computed amounts are shown in column 8 of Table 10. The proposed drainage tax rates to be levied against the uncleared land (Classes A-2, B-2, and C-2) are those mentioned under the heading "Uncleared or Non-producing Lands" (pages 26 & 27) which are in addition to general and school taxes.

If at any time the general and school taxes are reduced, the amount available for drainage taxes shown in Table 10 will be increased by the amount of such reduction. It is believed that since 1930 the average reduction in general and school taxes has been about 20 per cent.

Maintenance Work Required

Since 1930 very little maintenance work has been done on the district drainage improvements, and practically all of the ditches have become so filled with dense growths of willows that their capacities are reduced by 50 to 75 per cent of those for which they were designed, especially in the summer when the willows are in full foliage. As a result, much of the land in the district is at present poorly drained and a wet season is certain to cause crop failures over much of the area. It is useless to plan for rehabilitation of the district unless provision is made for the immediate clearing of the ditches and such other maintenance work as may be necessary.

An inspection of the district made in January and February, 1933, showed that the work outlined in Table 11 should be given attention in the immediate future. After the drainage works have once been put in good condition, it is believed annual expenditures for maintenance might be 15 per cent less than the estimate in Table 11.

Table 11 - Maintenance Work Required in Little River Drainage District

<u>Type of Work</u>	<u>Estimated Cost</u>
Ditch clearing (664 miles) - - - - -	\$35,500.00
Excavation work on ditches (48 miles) - - -	33,500.00
Headwater diversion works - - - - -	5,500.00
Maintenance of basins and dams - - - - -	1,000.00
Contingencies, highwater fighting, etc. - -	6,500.00
	<u>82,000.00</u>
Operation of district office, and miscellaneous	18,000.00
Grand total	<u>\$100,000.00</u>



Estimated Returns Available to Bondholders

Under the plan which has been outlined, the net income that would have been available for the bondholders for the years 1931 and 1932 are as given in Table 12.

Table 12 - Computed Returns for the Bondholders

Year	: Available for : drainage taxes : (Table 10, Col. 8):	: Maintenance cost, : first year : (Table 11)	: Amount available : for : bondholders
1931	: \$339,187	: \$100,000.	: \$239,187
1932	: 194,161	: 100,000.	: 94,161
1932 yields, assumed prices:			
As in Table 8	: 516,747	: 100,000.	: 416,747
As in Table 9	: 536,977	: 100,000.	: 436,977

The figures shown were obtained by subtracting the cost of maintenance from the net income for the district as stated in Table 10, column 8, and are based on the assumption that all the land in the district will pay the drainage taxes indicated. The net income shown for 1932 is considerably less than that for 1931, <sup>primarily</sup> because of decreased crop yield in 1932 although lower prices for corn, wheat, and oats had some effect.

Table 12 shows also the amount that would have been available for the bondholders in 1932 if the farm prices obtained for the crops had been equal to those used in Tables 8 and 9. If the prices of Table 8 prevailed in 1931, when the crop yields were considerably larger than in 1932, the net income available for the bondholders that year would have been \$535,000. If farm prices in 1931 had equalled those advocated in the farm relief bill recently passed by Congress (Table 9) the net income obtained by the bondholders, with present conditions of development in the district, would have been about \$540,000. These computations are based on the assumption that the assessments on the uncleared land would remain the same as those recommended in this report (pages 26 & 27). Any increase in return to

the bondholders over \$540,000 would come about either by clearing more land, raising the suggested rates on Class 2 lands, or through decrease in the general and school taxes.

For comparison with the above, the amounts due each year on district bonds and interest, for the balance of the life of the bonds are given in Table 13. In addition to the amounts given in Table 13, the assessments for drainage taxes must be large enough to include the cost of maintaining the drainage improvements and provide a factor of safety to cover defaults in payment.

Table 13. Payments Due on  
Little River Drainage District Bonds,  
including Interest

Year	Amount Due	:	Year	Amount Due
1933 :	\$853,575	:	1939 :	\$731,175
1934 :	884,370	:	1940 :	702,805
1935 :	856,960	:	1941 :	675,225
1936 :	910,400	:	1942 :	575,625
1937 :	786,285	:	1943 :	548,125
1938 :	758,335	:	1944 :	520,625
Total 1933 - 1944				\$8,803,505

#### OPERATION OF PROPOSED REHABILITATION PLAN

The plan of rehabilitation proposed herein for the Little River Drainage District recommends that no change be made in the legally fixed assessments for payment of the district's bonds and interest, but that for 1933 and subsequently, the bondholders accept as payment in full each year the amount that the lands can pay, determined in accordance with the method that has been described. Settlement of taxes due prior to 1933 will be a matter for agreement between the bondholders and the landowners.



Levying and Collecting Drainage Taxes

Each year the district should levy a tax sufficient to meet in full all requirements for that year. This annual assessment should be sufficient to retire all bonds and coupons maturing during the year and provide funds for maintenance of the ditch system and administration of the district. Also each year the capacity of the land to pay should be computed, and the actual charges the landowners should pay be determined as outlined in Table 10 and discussed later in this report.

Then when a landowner has paid the amount determined as equitable under this plan of adjustment, he should be given a receipt for the full amount of the drainage tax levy for that year. For example, if a parcel of land has been taxed \$2.54 per acre and under the plan of adjustment that particular parcel is classed as C-2 land, the rate of payment would be 15 cents per acre. (See page 31 and Table 10) When the 15 cents per acre has been paid, the owner of the tract will have discharged in full his drainage tax obligation for that year and will be given a receipt at the rate of \$2.54 per acre. The same procedure would be followed for lands of the other classes.

Retirement of Principal and Interest

Because the drainage tax receipts given to the landowners are to be, under the proposed plan, for the full amounts of the legal assessments, the face value of these receipts will be considerably more than the amount of taxes paid to the drainage district. In exchange for whatever principal and interest payments the district has received from the landowners, the bondholders will turn over to the district bonds and coupons in the amount of the face value of the receipts given to the landowners in exchange for those payments. Thus, if for any year the tax levy for bond principal and interest is \$900,000 and the district receives \$400,000 in payment of that levy for which it gives, according to the procedure stated in the preceding paragraph, receipts amounting to \$700,000, the bondholders will take the \$400,000 and will cancel

bonds and coupons amounting to seven-ninths of the principal and seven-ninths of the interest maturing that year, instead of four-ninths of each.

#### Effect of Overlapping Area on Income

The amounts available for bondholders, shown in Table 12, are the amounts available for overlapping districts as well as the Little River district. The amount available for the bondholders of the Little River District in any one year will depend upon either the deduction of the full assessments for overlapping districts, or upon the adjustments of such assessments with the overlapping districts. In this connection attention is called to the fact that, outside of the St. Francis Levee District and the Elk Chute Drainage District, the area overlapped by other districts is largely cultivated land - 29,095 acres cultivated out of 35,228 acres total. Much of this land does not carry maximum Little River District taxes, and with prices and yields as shown in Table 8 would have sufficient net income to pay both the Little River tax and the overlapping drainage taxes.

The St. Francis Levee District includes 118,195 acres of the Little River Drainage District, of which about 48 per cent is unimproved. It is important that some definite arrangement be made with this district and with the Elk Chute Drainage District relative to the division of taxes collected from the land under any proposed method of refinancing.

One method of agreement would be for the overlapping districts and the Little River district to cooperate in determining the net income from the land, as outlined in this report. Each district would then levy the full legal drainage tax against the land, and if the total of all such levies was less than the net income as determined, all drainage taxes would be paid in full. If the total drainage taxes levied exceeded the net income, the amount collected by each district would be in the same ratio to the total amount collected as its drainage tax levy was to the total drainage tax levy.

No attempt has been made in this report to work out a plan of settlement with overlapping drainage districts and, therefore, it is impossible to draw definite conclusions as to the effect of overlapping districts upon the net income to the Little River district bondholders.

#### Future Determinations of Capacity to Pay

Data heretofore presented show the yields of crops and the income for 1931 and 1932 and the area in various crops. Table 14 gives the weighted average yield per acre for each crop for all classes of land in the district for the two-year period 1931-1932 and the weighted average for the six counties of southeastern Missouri (Cape Girardeau, Stoddard, Scott, New Madrid, Dunklin, and Pemiscot) for the same period.

Table 14 - Ratios of Average Crop Yields in Little River Drainage District to Those for the Counties in which the District is located, 1931 - 1932.

Crop	:	:Weighted average yield per acre:		Ratio of district
	:Unit :	1931 - 1932		yield to county
	:	: District	: Six	: yield
			: counties	:
	:	:(Table 5)		Per cent
Corn	:bu. :	24.6	: 27.8	: 0.885
Seed Cotton	:lb. :	1234.	: 1131.	: 1.109
Wheat	:bu. :	17.7	: 14.8	: 1.196
Oats	: " :	24.3	: 29.4	: 0.827
Hay	: ton :	0.92	: 1.36	: 0.676

The average yields per acre for the six counties determined for any year in the future will enable the average yields per acre for the district to be calculated by applying the ratios given in the last column of Table 14. Then, assuming that the crop-area distribution in the district remains unchanged, with prices for southeastern Missouri crops determined for that year, the total crop returns and the landlord's share may readily be computed. It is recommended that the district and the bondholders' corporation request the University of Missouri to advise them in early August of each year during the life of the bond issue, the average yields and the farm prices of the crops for the six counties in which the Little River Drainage District is



located.

The average yields for the six counties may be substituted in column 4 of Table 14 and then multiplied by the ratios in column 5, to give new average yields for the district to replace the figures in column 3. Then by substituting these new yield figures in column 3 of Table 6 or 7, and the new crop prices in column 5 of the same table, the annual value of crop and the landlord's share can be computed. The per cent change in the return from the five crops listed in Table 14 should be computed, and the returns from the beans and other crops should be raised or lowered in the same ratio each year.

As land is cleared and brought into cultivation, the bondholders are entitled to their share of the resulting increased income. Probably the simplest way of determining this will be for the interested parties to canvass the district each year and determine the area that has been cleared and placed in cultivation since the previous survey. The areas found thus developed should have their classification changed to Class I and be taxed accordingly. It is recommended that every third year a survey be made for the purpose of determining any change that may have occurred in crop distribution in the district, and a new hypothetical acre be developed in the manner outlined in this report.

#### CONCLUSIONS

The lands of the Little River Drainage District can not, under present conditions, pay the drainage taxes necessary to meet its outstanding obligations. This situation is caused not only by high cost of drainage and low prices of farm products, but also by the fact that under the law maximum drainage assessments are levied against uncleared land which is yielding the owner no return. Any workable plan of rehabilitation must be based upon the ability of the land to pay and must be accepted by both bondholders and landowners.

It is useless to plan for rehabilitation of the finances of the district unless provision is made for immediate clearing of the ditches and such other maintenance work as may be required to make the drainage works effective.

The proposed plan, had it been in effect in 1931 and 1932, would have resulted in making available to the bondholders of the Little River and overlapping districts the amount of \$239,187 in 1931 and \$94,161 in 1932, provided all the land had paid the amounts suggested. Had the prices received for the 1932 crops been somewhere near those sought by the farm relief bill which recently passed Congress, the bondholders would have received \$436,927 that year under the proposed plan. The amounts available to the bondholders of the Little River District would depend upon agreements reached with the overlapping districts.

The amount of past-due taxes to be collected is a matter of agreement between bondholders and landowners, but must not be so great as to make it impossible for the landowners to meet future taxes. No suggestion is made in the report as to the amount of past-due taxes that should be paid.

The benefit assessments for the Little River Drainage District should remain as fixed by the court, and the tax levy for each year should be at the normal rate necessary to meet interest payments and to retire maturing bonds. Each landowner who pays the drainage taxes in accordance with the plan of rehabilitation proposed in this report should be given each year a receipt in full for the taxes levied for that year, and the bondholders should turn over to the district bonds represented by the receipts given in full.

A large portion of the lands in the Little River Drainage District are embraced also in overlapping districts. Some of the lands are liable for drainage taxes in as many as three other districts. Therefore, some agreement must be reached with those overlapping districts if any plan of refinancing the Little River district is to be successful. Any plan



for refinancing this district should not apply to lands in overlapping districts until such an agreement has been reached.

Any plan of reorganization, to be successful, will require able and efficient administration with full appreciation of equity for all parties concerned.





